

# [FREQUENCY SYNTHESIZING AND BACK-END PROCESSING CIRCUIT AND METHOD THEREOF]

## Abstract

A frequency synthesizing and back-end processing circuit and method thereof are provided. This circuit includes a fully digital frequency synthesizer by using interpolation and a linear feedback shift register to synthesize a frequency. After digital-to-analog conversion, it provides two options of the digital and analog signals. Then the selected signal will be mixed by the corresponding mixer. Finally, the filter removes the undesired noise to obtain the desired synthesized frequency signal. This frequency synthesizer does not require complex digital or analog circuits and can achieve a high frequency resolution with a lower circuit complexity, which is superior to the conventional art. The present invention also includes mixers for different frequencies and filters for back-end processing.